

Pg. 46. 10-12

⑩

$$|3x| = 18$$

$$3x = 18$$

$$x = 6$$

$$3x = -18$$

$$x = -6$$

⑪

$$|-4x| = 32$$

$$-4x = 32$$

$$x = -8$$

$$-4x = -32$$

$$x = 8$$

⑫

$$|x-3| = 9$$

$$x-3 = 9$$

$$x = 12$$

$$x-3 = -9$$

$$x = -6$$

Pg. 46 - #13-#18; #25-#30

(13) $2 | 3x-2 | = 14$
 $| 3x-2 | = 7$

$$3x-2=7$$

$$3x=9$$

$$\boxed{x=3}$$

$$3x-2=-7$$

$$3x=-5$$

$$\boxed{x=-\frac{5}{3}}$$

(14) $| 3x+4 | = -3$
no solution

(15) $| 2x-3 | = -1$
no solution

(16) $| x+4 | + 3 = 17$
 $| x+4 | = 14$

$$x+4=14$$

$$\boxed{x=10}$$

$$x+4=-14$$

$$\boxed{x=-18}$$

(17) $| y-5 | - 2 = 10$
 $| y-5 | = 12$

$$y-5=12$$

$$\boxed{y=17}$$

$$y-5=-12$$

$$\boxed{y=-7}$$

$$(18) \quad |4-z| - 10 = 1$$

$$|4-z| = 11$$

$$4-z=11$$

$$-z=7$$

$$\boxed{z=-7}$$

$$4-z=-11$$

$$-z=-15$$

$$\boxed{z=15}$$

$$(25) \quad 3|y-9| < 27$$

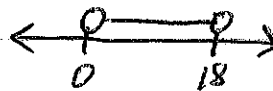
$$|y-9| < 9$$

$$y-9 < 9$$

$$\boxed{y < 18}$$

$$y-9 > -9$$

$$\boxed{y > 0}$$



$$(0, 18)$$

$$(26) \quad |6y-2| + 4 < 22$$

$$|6y-2| < 18$$

$$6y-2 < 18$$

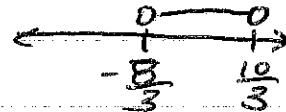
$$6y < 20$$

$$\boxed{y < \frac{10}{3}}$$

$$6y-2 > -18$$

$$6y > -16$$

$$\boxed{y > -\frac{8}{3}}$$



$$(-\frac{8}{3}, \frac{10}{3})$$

$$(27) \quad |3x-6| + 3 < 15$$

$$|3x-6| < 12$$

$$3x-6 < 12$$

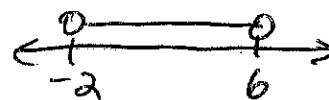
$$3x < 18$$

$$x < 6$$

$$3x-6 > -12$$

$$3x > -6$$

$$x > -2$$



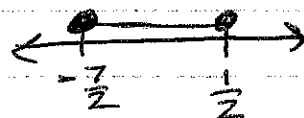
$$(-2, 6)$$

$$\begin{aligned} \textcircled{28} \quad & \frac{1}{4} |x-3| + 2 < 1 \\ & \frac{1}{4} |x-3| < -1 \\ & |x-3| < -4 \end{aligned}$$

no solution
(positive is never less than a negative)

$$\begin{aligned} \textcircled{29} \quad & 4 |2w+3| - 7 \leq 9 \\ & 4 |2w+3| \leq 16 \\ & |2w+3| \leq 4 \\ & 2w+3 \leq 4 \\ & 2w \leq 1 \\ & w \leq \frac{1}{2} \end{aligned}$$

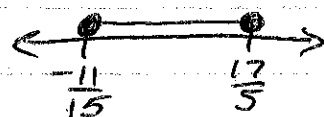
$$\left[-\frac{7}{2}, \frac{1}{2}\right]$$



$$\begin{aligned} & 2w+3 \geq -4 \\ & 2w \geq -7 \\ & w \geq -\frac{7}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{30} \quad & 3 |5t-1| + 9 \leq 23 \\ & 3 |5t-1| \leq 14 \\ & |5t-1| \leq \frac{14}{3} \\ & 5t-1 \leq \frac{14}{3} \\ & 5t \leq \frac{17}{3} \\ & t \leq \frac{17}{15} \end{aligned}$$

$$\left[-\frac{11}{15}, \frac{17}{15}\right]$$



$$\begin{aligned} & 5t-1 \geq -\frac{14}{3} \\ & 5t \geq -\frac{11}{3} \\ & t \geq -\frac{11}{15} \end{aligned}$$